V. WATER USE

A. Public Water Systems

The Water Management Planning Area contains 85 public and semi-public water systems: 25 community systems--13 municipal, 3 water districts, 8 private, 1 water association; and 60 non-community systems. There are 8 small (501 to 3,300 people served) community systems and 8 very small (500 or fewer people served) community systems.

1. Community

COUNTY	PWSID	OWNER
BREATHITT	0130208	JACKSON MUNICIPAL WATER WORKS
BREATHITT	0130949	MOUNT CARMEL HIGH/BOARDING SCHOOL
BREATHITT	0130330	SHOUSES MHP #2
KNOTT	0600198	HINDMAN WATER DEPARTMENT
KNOTT	0600129	JAMESTOWN VILLAGE MHP
KNOTT	0600062	KNOTT COUNTY SEWER & WATER DISTRICT
LEE	0650024	BEATTYVILLE WATER WORKS
LEE	0650412	SOUTHSIDE WATER ASSOCIATION
LESLIE	0660204	HYDEN LESLIE COUNTY WATER DISTRICT
LETCHER	0670462	BLACKEY WATER SYSTEM
LETCHER	0670279	FLEMING-NEON WATER COMPANY
LETCHER	0670806	JACKHORN WATER SUPPLY
LETCHER	0670213	JENKINS WATER SYSTEM
LETCHER	0670466	US FILTER OPERATION/WHITESBURG
OWSLEY	0950036	BOONEVILLE WATER & SEWER
PERRY	0970184	HAZARD WATER DEPARTMENT
PERRY	0970484	VICCO WATER SUPPLY
PERRY	0971007	VILLAGE OF BUCKHORN
WOLFE	1190894	BETHANY CHRISTIAN MISSION CENTER
WOLFE	1190061	CAMPTON WATER PLANT

2. Non-Community

COUNTY	PWSID	OWNER
BREATHITT	0133183	HIGHLAND TURNER ELEMENTARY SCHOOL
BREATHITT	0132994	KENTUCKY MOUNTAIN BIBLE COLLEGE
BREATHITT	0132249	OAKDALE CHRISTIAN HIGH SCHOOL
BREATHITT	0132267	ROUSSEAU ELEMENTARY SCHOOL
KNOTT	0602174	BEAVER CREEK ELEMENTARY SCHOOL
KNOTT	0602286	BECKHAM COMBS ELEMENTARY SCHOOL

KNOTT	0602280	EMMALENA ELEMENTARY SCHOOL
KNOTT	0602281	HINDMAN ELEMENTARY SCHOOL
KNOTT	0603198	LAKEVIEW HEADSTART
KNOTT	0603267	BEARVILLE MARKET
KNOTT	0602422	CAMP NATHANIEL
KNOTT	0602752	CARR CREEK STATE RESORT PARK
KNOTT	0602753	CORPS OF ENGINEERS/DAM SITE
KNOTT	0602175	HOLLY HILLS SHOPPING CENTER
KNOTT	0603404	HWY 80 MOTEL
KNOTT	0603469	RED FOX MINI MART & RESTAURANT
LESLIE	0662180	HAYES LEWIS ELEMENTARY SCHOOL
LETCHER	0672292	ARLIE BOGG ELEMENTARY SCHOOL
LETCHER	0672290	BECKHAM BATES ELEMENTARY
LETCHER	0672688	CAMPBELLS BR/LINEFORK COMM CTR
LETCHER	0672427	DOUBLE QUICK MART
LETCHER	0672690	KINGDOM COME SETTLEMENT
LETCHER	0673238	KINGS CREEK SENIOR CITIZENS
LETCHER	0672553	MAYKING HEADSTART CENTER
LETCHER	0673052	OVEN FORK SENIOR CITIZENS CENTER
LETCHER	0673056	PARKWAY MOTEL RESTAURANT
LETCHER	0673116	DEANE QUICK STOP
LETCHER	0672475	HOLCOMB CUSTARD STAND
LETCHER	0673395	ISOM IGA
LETCHER	0672428	JOES DRIVE IN
OWSLEY	0953193	CAMP BRENT LANEER
PERRY	0972509	LEATHERWOOD ELEMENTARY SCHOOL
PERRY	0972920	LITTLE FOLKS SHOP HEADSTART
PERRY	0972696	LOST CREEK SCHOOL
PERRY	0972556	MOUNT COMPREHENSIVE CARE CORP
PERRY	0972312	ROBINSON ELEMENTARY SCHOOL
PERRY	0972313	VIPER ELEMENTARY SCHOOL
PERRY	0972314	WILLARD ELEMENTARY SCHOOL
PERRY	0973234	CAMPBELLS BP SERVICE
PERRY	0972349	CHANEY'S RESTAURANT
PERRY	0972190	CHRISTY'S DAIRY BAR/RESTAURANT
PERRY	0973366	FRONT PORCH STORE
PERRY	0972612	HOMEPLACE CLINIC
PERRY	0973409	ROARKS BP FOOD MART
PERRY	0973425	TWIN ROCKS BIBLE CAMP

B. Private Domestic Water Systems

About 73,000 people in the WMPA rely on private domestic water systems: 66,000 on wells, and 7,000 on other sources.

Breathitt County

About 10,250 people in Breathitt County rely on private domestic water supplies: nearly all on water wells.

Most wells drilled in valley bottoms are adequate for a domestic water supply. Fewer than half the wells drilled on hillsides are adequate for a modern supply and wells on hilltops yield smaller quantities of water. In the eastern quarter of the county ground water is slightly more plentiful with the possibility of large enough yields in wells 200 feet or deeper for small municipal or industrial supplies.

Most of the water obtained from drilled wells is extremely hard and contains noticeable amounts of iron. Salty water may be found from 50 to several hundred feet below the level of the principal valley bottoms.

A few springs supply sufficient quantities of water for domestic use. Almost all springs yield less than 5 gallons per minute.

Knott County

About 15,000 people, or 6 of 7 households, in Knott county rely on private domestic water systems: 14,000 on wells and 1,000 on other sources.

Of those, about 84 percent rely on drilled wells, 9 percent on dug wells, and 7 percent on cisterns and other sources. The primary problem with private wells in Knott County is high levels of sulfur or iron.

Most wells drilled in valley bottoms and on hillsides are adequate for modern domestic supply; however, on ridge tops, only some wells are adequate for modern domestic use in terms of water quantity.

Wells drilled in valleys to depths greater than 200 feet may yield enough water for small municipal or industrial supplies.

Ground water from most wells is considered moderately hard and contains noticeable amounts of iron. In the drainage basin of the Right Fork of Beaver Creek, of southeastern Knott County, salty water may be found at depths less than 100 feet below the level of the valley bottom. In the rest of Knott County salty water in wells probably will not be found less than 200 feet below the level of the principal valley bottoms.

A few springs supply sufficient quantities of water for domestic use, usually less than 5 gpm.

Lee County

Almost 2,000 people in Lee County rely on private domestic water supplies: 1,300 on wells and 700 on other sources.

Throughout most of Lee county wells drilled in valley bottoms are adequate for domestic use. Yields to wells become progressively less on hillsides and ridges. Some wells drilled on ridges produce enough water for domestic use. Generally wells on broad ridges produce more water than wells on narrow ridges or hilltops.

Most wells drilled in the valley bottoms are completed in limestone, produce hard water often with noticeable amounts of iron. On hillsides and ridges wells are often completed in sandstone, contain soft to moderately hard water with noticeable amounts of iron. Salty water may be found at depths greater than 100 feet below the level of the Kentucky River.

A few springs supply sufficient quantities of water for domestic use. Most springs yield less than 5gpm except limestone springs that occur near stream level often produce 100 gpm or greater.

Leslie County

About 8,100 people in Leslie County rely on private domestic water supplies: 7,400 on wells, and 700 on other sources.

Problems with existing private wells in Leslie County are various and scattered throughout the county. In certain areas there is a quantity problem while in other areas there is poor quality due to high concentrations of salt and various other minerals and metals.

Most wells drilled in valley bottoms are adequate for a domestic supply. In the northwestern half of the county fewer than half of the wells on hillsides and only some of the wells on hilltops are adequate for a domestic supply. In the southeastern half of the county about three-quarters of the wells drilled on hillsides are adequate for a domestic supply and some wells on hilltops or ridges meet the needs of a domestic supply. Also in the southeastern half of the county wells deeper than 200 feet in valleys may yield enough water for small municipal or industrial supply.

A few springs supply sufficient quantities of water for domestic use. Almost all ground water obtained from drilled wells in this area is moderately to extremely hard and contains noticeable amounts of iron. Salty water may be found in wells drilled less than 100 feet below the level of the principal valley bottoms, except in the south-eastern half of the county where salty water probably will not be found less than 200 feet. Springs yield less than 5 gpm.

Letcher County

About 18,500 Letcher countians depend on private domestic water supplies: about 17,000 on wells, and 1,500 on other sources. The Sandlick area of Letcher County currently has problems with a lack of water in private wells. Most other areas of the county have high levels of iron or sulfur.

More than three-quarters of the wells drilled in valley bottoms and on mountainsides are adequate for a domestic supply. Some wells on ridges and mountaintops are adequate for domestic supply. Drilled wells more than 200 feet deep in valleys may yield enough water for small municipal or industrial supplies. In the area north of Pine Mountain, ground water from most drilled wells is moderately hard and contains noticeable amounts of iron. Salty water in drilled wells probably will not be found less than 200 feet above the principal valley bottoms.

In the area along Pine Mountain and south of the mountain, the water quality is slightly better with few wells less than 300 feet below the principal valley bottoms will yield salty water. The ground water is soft but contains noticeable amounts of iron. This area also contains limestone beds that when faulted and below drainage may yield several hundred gallons per minute. Springs in this area will yield 50 gpm, but generally yield less than 10gpm.

Owsley County

About 1,600 people in Owsley County rely on private domestic water supplies: 1,450 on wells, and 150 on other sources.

Most wells drilled in valley bottoms are adequate for a domestic supply. Fewer than half the wells drilled on hillsides are adequate for a domestic supply and wells on hilltops and ridges yield smaller quantities of water. In the western half of the county wells penetrating 500 feet or more of sandstone may yield enough water for small municipal or industrial supply.

Water obtained from most wells in this area is soft or moderately hard and contains noticeable amounts of iron. Salty water may be found in wells drilled less than 100 feet below the level of the principal valley bottoms.

A few springs supply sufficient quantities of water for domestic use, usually produces less than 5 gpm.

Perry County

About 12,400 residents of Perry County rely on private domestic water supplies: 10,300 on wells, and 2,100 on other sources.

Most rural Perry Countians have drilled wells. As is the case throughout the district, iron and sulfur are common problems. In the eastern half of Perry County more than three-quarters of the wells drilled in valley bottoms and on mountainsides are adequate for a domestic supply. Some wells on ridges and mountaintops are adequate for domestic supply. Drilled wells more than 200 feet deep in valleys may yield enough water for small municipal or industrial supplies. In the western half of the county most wells drilled in valley bottoms are adequate for domestic supply. Fewer than half the wells on hillsides are adequate to meet the needs for a modern domestic supply. Wells on mountaintops and ridges yield smaller quantities of water.

Almost all ground water obtained from most drilled wells in this area is moderately to extremely hard and contains noticeable amounts of iron. Salty water may be found from 50 to several hundred feet below the level of the principal valley bottoms, except in the eastern half of the county where salty water probably will not be found less than 200 feet.

A few springs supply sufficient quantities of water for domestic use, usually produces less than 5 gpm.

Wolfe County

About 4,900 people in Wolfe County rely on private domestic water supplies: 4,400 on wells, and 500 on other sources.

Most wells in valley bottoms are adequate for domestic supply. Yields to wells become progressively less on hillsides and ridges. Deep wells penetrating over 500 feet of sandstone may yield enough water for small municipal or industrial supplies.

Water from drilled wells range from moderately to extremely hard and contains noticeable amounts of iron. In valley bottoms salty water may be encountered at depths of 100 feet.

A few springs supply sufficient quantities of water for domestic use. Most springs have large seasonal variations in flow commonly issue from the base of sandstone and limestone formations in valley bottoms.

C. Current and Projected Population

Estimated population and public water service in the planning area.

County	1999 Pop	On Public	%	2020 Pop	On Public	%
Breathitt	15600	5100	33	16800	11900	71
Knott	17500	2400	14	17300	9900	57
Lee	7900	5900	75	8200	6900	84
Leslie	13400	5400	40	12800	9100	71
Letcher	26500	8000	30	25800	19900	77
Owsley	5300	3700	70	5600	4500	80
Perry	31100	18700	60	32100	27600	86
Wolfe	7500	2500	33	8750	4600	53

D. Current Water Use

1. Water Suppliers

2. Water Distributors

3. Water losses

4. Other permitted water withdrawers

5. Agricultural Water Use

6. Permit-exempt water withdrawers

7. **Chart Disaggregated Water Use; Supplier by Source**

8. **Existing or potential water use conflicts**

E. Projected Water Use

1. **Demand Forecast**

2. **Charts: Disaggregated projected demands**

3. **Forecasting methodology**